

**REMARKS**

Claims 1-3, 5-11, and 13-32 are pending in this application. By this Amendment, claims 1-3, 5-11, and 13-32 are amended; and claims 4 and 12 are cancelled without prejudice to or disclaimer of the subject matter contained therein. No new matter is added as claim 1 has been amended to include the features found in *at least* originally filed claims 4 and 12. Claim 1 is the sole independent claim.

Favorable reconsideration of this application, in light of the preceding amendments and following remarks, is respectfully requested.

**Acknowledgments**

Applicant appreciates the Examiner's indication that the Information Disclosure Statement filed on February 3, 2006 and August 28, 2009, have been considered.

Applicant also respectfully notes that the present action indicate that the drawings have been accepted by the Examiner.

Applicant notes that the Examiner has not indicated the acknowledgement that certified copies of priority documents have been received by the U.S.P.T.O. Applicant respectfully requests that the Examiner's next communication include an indication as to the acknowledgement of claim for foreign priority.

**Allowable Subject Matter**

Applicant notes with appreciation that the Examiner has deemed claims 23-26 and 30 as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant respectfully submits, however, that claims 1-3, 5-11, and 13-32 are also allowable for at least the foregoing amendments and following remarks.

### **Objection to the Drawings**

The drawings are objected to under 37 CFR 1.83(a). In particular, the drawings must show the features of “balun” or “180 degree hybrid” as claimed in claims 19-22. Applicant respectfully traverses this objection.

Specifically, 35 U.S.C. § 113 provides that “an applicant shall furnish a drawing where necessary for understanding the subject matter sought to be patented.” However, the subject matter sought to be patented does not necessitate a drawing for understanding the invention. For instance, one skilled in the art would appreciate that a “balun” may be a type of electrical transformer that can convert electrical signals that are balanced about ground (differential) to signals that are unbalanced and vice versa. Accordingly, it is submitted that a “balun” or “180 degree hybrid” are not necessary for the understanding of the invention.

Therefore, Applicant respectfully requests reconsideration and withdrawal of the objection to the drawings.

### **Example Embodiments**

In an example, non-limiting embodiment, *at least* FIGS. 4, 9, 10, 13, and 14, illustrate a plurality of pairs of electric dipoles, each pair of dipoles being parallel with respect to each other and oppositely located thereof, wherein each dipole includes two or more conducting lines that are connected at one or more point or an extended part of the conducting lines. For instance, the embodiment of pairs of dipole in which the

two dipoles are parallel, and each dipole has parallel conducting arms, e.g., where the dipoles are oriented in one direction, may provide a pair of dipoles that may transmit and receive in one direction and with one linear polarity. The transmission may occur in a direction that may be normal to the dipoles. Further, the location of the dipoles above a ground plane may provide a beam with a high directivity in one direction. Hence, the antenna of claim 1 provides a number of advantageous properties, such as constant beam width and directivity, low cross polarization, as well as crosspolar sidelobes, low input reflection coefficient and/or constant phase center location over a very large frequency band of several octaves.

Moreover, the arrangement of each dipole as encompassing two or more conducting lines connected at one or more points or over an extended part of the conducting lines provides a relatively compact antenna. In particular, it has been found that this type of highly accurate type of antenna may be used in radio telescopes requiring very high accuracy. Accordingly, the antenna of claim 1 may provide a very accurate and constant performance. Hence, this antenna may be used in applications, such as VLBI (Very Long Base Line Interferometry), which is used for geodecy (to measure displacements of the continental shelves).

### **Claim Rejections - 35 U.S.C. § 102**

#### ***I. van Hoozen***

Claims 1, 2, 8, 9, 16, 17, 27-29, 31, and 32 are rejected under 35 U.S.C. § 102(b) as being anticipated by van Hoozen et al. (U.S. Patent No. 6,094,176). Applicant respectfully traverses this rejection for the reasons detailed below.

Applicant respectfully submits that van Hoozen fails to disclose or suggest each and every element of claim 1, and therefore, an anticipatory rejection has not been established.<sup>1</sup>

For example, claim 1, as amended, recites, *inter alia*:

**a plurality of pairs of electric dipoles, each pair of dipoles being parallel with respect to each other and oppositely located thereof, wherein each dipole includes two or more conducting lines that are connected at one or more point or an extended part of the conducting lines.....**

By contrast, van Hoozen discloses each dipole having only a **single conducting line**. See, e.g., FIG. 3 of van Hoozen.

Further, van Hoozen is completely silent of teaching or suggesting “a conducting body acting as a ground plane, above which the plurality of pairs dipoles are located,” as recited in amended claim 1. In fact, it would not be feasible to include a ground plane in the antenna of the type disclosed in van Hoozen, since this would provide a totally different antenna type, and all the intended properties of the antenna would be lost. In other words, the transmission in the antenna disclosed in van Hoozen occurs in a different direction relative to the dipoles as compared to the antenna of claim 1 - e.g., not in a normal direction. Accordingly, the antenna discussed in Van Hoozen is of a different type, and aimed at totally different applications and use. Thus, van Hoozen ***teaches away*** from having a conducting body acting as a ground plane.

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<sup>1</sup> A claim is anticipated only if each and every element as forth in the claim is found, either expressly or inherently described, in a single prior art reference. See MPEP § 2131; *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Accordingly, van Hoozen fails to disclose or suggest, *inter alia*, "a conducting body acting as a ground plane, above which the plurality of pairs dipoles are located," as recited in amended claim 1.

Therefore, contrary to the Examiner's contention, van Hoozen does not disclose or suggest each and every element of claim 1.

Since van Hoozen fails to disclose each and every element of claim 1, it cannot provide a basis for a rejection under 35 U.S.C. § 102(b) and, thus, is allowable. Claims 2, 8, 9, 16, 17, 27-29, 31, and 32 depend from amended claim 1 and, therefore, allowable for similar reasons to those discussed above with respect to claim 1.

For at least these reasons, the Examiner is respectfully requested to reconsider and withdraw the § 102(b) rejection of claims 1, 2, 8, 9, 16, 17, 27-29, 31, and 32.

## **II. Godard**

Claims 1, 2, 4, 5, and 8 are rejected under 35 U.S.C. § 102(b) as being anticipated by Godard et al. (U.S. Patent No. 6,885,350). Applicant respectfully traverses this rejection for the reasons detailed below.

As similarly disclosed above, Applicant respectfully submits that Godard also fails to disclose, or even suggest, *inter alia*, "each pair of dipoles being parallel with respect to each other and oppositely located thereof, wherein each dipole includes two or more conducting lines that are connected at one or more point or an extended part of the conducting lines," as recited in amended claim 1.

Godard, on the other hand, is related to a totally different type of antenna than the antenna of claim 1. Specifically, the antenna of Godard does not have pairs of

dipoles, wherein each dipole includes two or more conducting lines that are connected at one or more points or over an extended part of the conducting lines. Godard merely discloses a first dipole strip 12 and a second dipole strip 13 – *see FIG. 2 of Godard*. Godard is completely silent that each dipole includes two or more conducting lines that are connected at one or more points or over an extended part of the conducting lines.

Further, even though there is a ground plane (11) in Godard, it is respectfully submitted that the ground plane of Godard is used in a different way - the antenna is standing on it - and thus provides different properties to the antenna. Moreover, the antenna of Godard is not suitable for making compact and constantly radiating antennas.

Therefore, contrary to the Examiner's contention, Godard does not disclose or suggest each and every element of claim 1.

Since Godard fails to disclose each and every element of claim 1, it cannot provide a basis for a rejection under 35 U.S.C. § 102(b) and, thus, is allowable. Claims 2, 4, 5, and 8 depend from amended claim 1 and, therefore, allowable for similar reasons to those discussed above with respect to claim 1.

For at least these reasons, the Examiner is respectfully requested to reconsider and withdraw the § 102(b) rejection of claims 1, 2, 4, 5, and 8.

### **III. Bloy**

Claims 1, 2, 8, 10-14, 16, 19, and 23 are rejected under 35 U.S.C. § 102(b) as being anticipated by Bloy (U.S. Patent No. 6,661,378). Applicant respectfully traverses this rejection for the reasons detailed below.



As similarly disclosed above, Applicant respectfully submits that Bloy also fails to disclose, or even suggest, *inter alia*,

**a plurality of pairs of electric dipoles, each pair of dipoles being parallel with respect to each other and oppositely located thereof, wherein each dipole includes two or more conducting lines that are connected at one or more point or an extended part of the conducting lines.....**

as recited in amended claim 1.

In the outstanding Office Action, the Examiner states, on page 4, first paragraph, that Bloy teaches “at least one dipole comprises two oppositely conductive arms with a feed gap between them,” without alluding to which figures and/or passage in Bloy. Applicant has read the entire patent of Bloy, and respectfully submits that Bloy does not teach or suggest each pair of dipoles being parallel with respect to each other and oppositely located thereof, wherein each dipole includes two or more conducting lines that are connected at one or more point or an extended part of the conducting lines. On the contrary, the dipoles in Bloy (*see e.g., FIGS. 7 and 8*) include dipoles each formed by a “single” conducting line.

In addition, Bloy fails to disclose or suggest the feature of “a conducting body acting as a ground plane, above which the plurality of pairs dipoles are located,” as recited in amended claim 1.

Therefore, contrary to the Examiner’s contention, Bloy does not disclose or suggest each and every element of claim 1.

Since Bloy fails to disclose each and every element of claim 1, it cannot provide a basis for a rejection under 35 U.S.C. § 102(b) and, thus, is allowable. Claims 2, 8, 10-14, 16, 19, and 23 depend from amended claim 1 and, therefore, allowable for similar reasons to those discussed above with respect to claim 1.

For at least these reasons, the Examiner is respectfully requested to reconsider and withdraw the § 102(b) rejection of claims 1, 2, 8, 10-14, 16, 19, and 23.

**Claim Rejections -35 U.S.C. § 103**

Claims 3, 6, 7, 15, 18 and 20-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over van Hoozen et al. (U.S. Patent No. 6,094,176) in view of Jorgenson et al. (U.S. Patent No. 5,952,982). Applicant respectfully traverses this rejection for the reasons detailed below.

Claims 3, 6, 7, 15, 18 and 20-22 are believed to be allowable for at least the reasons set forth above regarding claim 1. The Jorgenson reference fails to provide the teachings noted above as missing from the van Hoozen reference. Since claims 3, 6, 7, 15, 18 and 20-22 are patentable at least by virtue of their dependency on independent claim 1, Applicant respectfully requests that the rejection of claims 3, 6, 7, 15, 18 and 20-22 under 35 U.S.C. § 103(a) be withdrawn.

**CONCLUSION**

In view of the above remarks and amendments, Applicant respectfully submits that each of the pending objections and rejections has been addressed and overcome, placing the present application in condition for allowance. A notice to that effect is respectfully requested. Further, the above remarks demonstrate the failings of the outstanding rejections, and are sufficient to overcome the rejections. However, these remarks are not intended to, nor need they, comprehensively address each and every reason for the patentability of the claimed subject matter over the applied prior art. Accordingly, Applicant does not contend that the claims are patentable solely on the basis of the particular claim elements discussed above.



Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned, at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By

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